REMARKS

Claims 1-20 are currently pending in the patent application. The Examiner has finally rejected Claims 1-20 under 35 USC 102 as anticipated by Yang. Applicants respectfully contend that the invention is patentable over the cited art.

The present invention is directed to an apparatus, program storage device, and a method for evaluating workload across a processing environment having a plurality of computer systems each having a plurality of assigned workload units, wherein the method comprises the steps of assigning a plurality of impact values, one impact value for each workload unit assigned for each of the plurality of computing systems, wherein the assigning of each impact value comprises determining a change in system expiration date should the workload unit be removed from the system; and assessing the workload based on the impact values.

An impact value is assigned for each workload unit, wherein a workload unit is expressly defined for the application as "a subset of the workload", the workload being "the set of identifiable tasks that execute in the processing system" (see: page 8, line 19-page 9, line 3). For each subset of the workload, an impact value is

assigned, representing the change in system expiration date that would occur if the workload unit was removed from the system. The term "expiration date" is the date when the server workload is expected to exceed its capacity because of growth in workload. The expiration date may be calculated using life expectancy, capacity space, or other method, as detailed in the Specification on page 11, lines 1-18. Applicants respectfully point out that while the manner of calculating the expiration date for the system may be flexible, Applicants are not claiming a manner of calculating expiration date for a system. Applicants are claiming a system and method and program storage device for evaluating workload across a processing environment, and it is the assigning of an impact value as the determined change in expiration date for each workload unit that is a claim feature.

The 102 reference, the Yang patent, is directed to a method and apparatus for modeling or profiling a system based on workload in order design the system. A model is generated using "a set of generic system activities" and performance estimates, after which hardware parameters are determined to design a system to handle the activities. Yang uses computer activity elements ("CAE") "to capture the fundamental activities being performed by [a] respective

software application" (see: Col. 4, line 1-8). A set of CAE is calculated for each transaction (see: Col. 26, lines 18-19). A "user focussed workload" ("UFW") is collected "using forms or templates ...regarding the application that is available to the user" (Col. 5, lines 50-53). The UFW is translated into a computer activity workload ("CAW") representing the workload data structure that mathematically describes the workload in terms of CAE elements (Col. 5, lines 58-62). Yang models expected application workload for a user and then recommends system requirements for creating a system for that specific user for the user's expected usage of the system.

Applicants respectfully assert that the Yang patent neither teaches nor suggests the invention as claimed. Yang does not teach or suggest evaluating workload across an actual processing environment having a plurality of computer systems each having a plurality of assigned workload units. Rather, Yang models anticipated requirements for projected applications under user-estimated usage conditions.

In the ***Response to Arguments*** section, the Examiner states that the recitation of evaluating workload across an actual processing environment having a plurality of computer systems each having a plurality of assigned workload units has not been given patentable weight since the language

appears in the preamble of the claims. By this amendment, Applicants have repeated that language in the body of the claim to clearly recite that the evaluation of workload comprises evaluating an actual workload of a processing environment, and not a modeled, theoretical workload.

Applicants have further argued that Yang does not assign a plurality of impact values to assigned workload units. Yang generates a workload data structure to mathematically describe workload estimates. Yang does not teach or suggest system expiration date, since Yang does not have a predefined, existing processing environment having a plurality of computer systems each having a plurality of assigned workload units. Rather, Yang models a larger system to accommodate larger workloads, so the concept of system expiration date is simply not applicable.

Applicants reiterate that the terms used in the claims, including "impact value" and "system expiration date" are terms that have definite meanings for the present invention. The Yang patent does not teach or suggest those terms for its theoretical environment, let alone in the context of workload evaluation for a processing environment having a plurality of computer system each having assigned workload units.

With specific reference to the language of the independent claims, the Yang patent does not teach steps, program storage device, or means for assigning a plurality of impact values, one impact value for each actual workload unit assigned for each of the plurality of computer systems in a processing environment having a plurality of computing systems each having a plurality of assigned workload units, does not teach assigning impact values by determining a change in system expiration date should the workload unit be removed from the system; and does not teach assessing the actual workload based on assigned impact values.

It is well established under U. S. Patent Law that, for a reference to anticipate claim language under 35 USC 102, that reference must teach each and every claim feature. Since the Yang patent does not teach steps or means for assigning a plurality of impact values, one impact value for each workload unit assigned for each of the plurality of computing systems, wherein the assigning of each impact value comprises determining a change in system expiration date should the workload unit be removed from the system; and assessing the workload based on the impact values, it cannot be maintained that Yang anticipates the invention as set forth in the independent claims, Claims 1, 10, and 12. Applicants further point out that, a reference which does

not anticipate the language of the independent claims cannot be said to anticipate the claims which depend therefrom and add further limitations thereto.

With specific reference to the language of the dependent claims, Applicants assert that Yang makes no mention of system life expectancy (Claims 2 and 19) for computer systems in an actual processing environment. The cited passage from Col. 5, lines 1-17 does not include any teaching related to system life expectancy. Rather, the cited passage discusses estimated percent utilization and states that modeled systems are selected so as not to exceed 100% capacity. The passage further states that "[b]y collecting the CAE-related costs of each subsystem...a profile can be created...[that] is workload independent". Clearly the Yang teaching of creating a workload independent profile of a modeled system does not anticipate determining the actual change in system life expectancy based on impact values assigned for each workload unit.

The Examiner has additionally cited the passage found in Col. 6, lines 6-22 against the language found in Claims 2 and 19. The cited passage states that workload definition information for use in modeling can be collected from actual workload information. Applicants respectfully contend that using old information about actual workloads for designing a

system model is not the same as or suggestive of determining actual system life expectancy in an actual processing environment.

The Examiner has additionally cited the passage found at Col. 7, lines 31-62 against the language of Claims 2 and 19. The cited passage states that workload analysis should take into account events and trends for projected work. Those teachings do not anticipate the claimed determining of the actual change in an actual system's expiration data based on system life expectancy. The passage further discusses "profiling" a model system, which clearly does not read on determining values for actual computer systems executing assigned workload units.

With regard the language of Claims 3 and 20, the Examiner has cited the three passages discussed above with respect to the language of Claims 2 and 19. None of the cited passages teaches determining a change in system expiration date for an actual computing system based on capacity space. While Yang estimates anticipates workload with events and trends and estimates whether a candidate CPU can handle the projected workload, such is not the same as or suggestive of determining a change in actual system expiration date for an actual computing system based on capacity space when executing assigned workload units.

The Examiner has additionally cited the passage from Col. 15, lines 35-54 against the language of Claims 3 and 20. The passage discusses system sizing and capacity planning. Applicants again contend that selecting a candidate system to accommodate a modeled workload is not the same as or suggestive of performing workload analysis and balancing for an actual processing environment.

With regard to Claims 4 and 13, the Examiner has cited the passage, and code detailed therein, from Col. 26, line 45-Col. 27, line 5. Yang detailed calculating anticipated reads and writes for one transaction to model the workload for the transaction. Such is not the same as or suggestive of sorting actual workload units based on assigned impact values.

With regard to Claims 5 and 14, the Examiner cites the passage from Col. 25, lines 13-20 which teaches characterizing one transaction in terms of CAE. There is not mention in the passage of altering workload of one or more system. Applicants reiterate that since Yang is "operating" in a theoretical environment, Yang neither teaches nor suggests actual expiration dates of actual systems or altering actual workloads for one or more systems.

With respect to Claims 6 and 15, and Claims 7-9 and 15-18 which depend respectively therefrom, Applicants argue that the cited passage from Col. 33, lines 30-62 does not anticipate the claimed step and means for comparing the expiration data of each of a plurality of actual computing systems to at least one target planning date for servicing the actual computing systems. What Yang mentions in the cited passage is response times for modeled systems. Again, since Yang is operating in the theoretical environment, real factors such as servicing dates are simply not relevant. Yang does not teach or suggest any consideration of target planning dates for servicing systems. Clearly, therefore, Yang does not anticipate the language of Claims 6-9 and 15-18.

In rejecting the language of Claims 7 and 16, the Examiner cites Col. 25, lines 13-20. The cited passage states that "the transaction mix can be altered by changing the setting for number of transactions, the frequency, or the percentage mix for each transaction type." Those teachings relate to Yang generating a set of CAE for (i.e., modeling) a transaction. There is nothing in the cited passage which teaches or suggests expiration dates, target planning dates for system servicing, or altering workloads for at least two actual computing systems.

With regard to the language of Claims 8 and 17, the Examiner again cites the teachings found in Col. 6, lines 9-36. The cited passage states that workload definition information for use in modeling can be collected from actual workload information, that the workload definition is "transferable to other applications and hardware", that "the same workload definition can be used for analysis performed with respect to a plurality of different hardware platforms". Creating a generic workload definition for system modeling does not anticipate the claims which recite creating "From" and "To" lists relative to at least one target planning date for servicing of actual computing systems, and reassigning actual workload units based on assigned impact values reflecting a change in system expiration date if a workload unit is moved from one actual computing system to another. Yang is providing a generic workload definition that can be used to evaluate different candidate system. Such is not the same as or suggestive of evaluating and moving actual workload units in a runtime environment.

The language of Claims 9 and 18, which recites calculating new expiration dates for computing systems on the "From" and "To" lists after reassignment of workload units, has additionally been rejected. The Examiner cites

Col. 5, line 1 through Col. 6, line 36. The cited teachings all relate to how Yang defines its theoretical workload and CAE. Applicants again argue that the Yang teachings do not anticipate system expiration dates at all, since it is modeling candidate systems, and do not anticipate calculating new expiration dates of actual systems as claimed. Applicants reiterate that Yang is essentially designing a system and opts to change the system design, but does not teach of suggest altering the workload of an existing system.

With regard to Claim 11, Applicants acknowledge that Fig. 7 of Yang illustrates a storage location. However, Yang's provision of a storage location in a "mechanism for profiling a system" is not the same as or suggestive of providing a storage location in the apparatus of Claim 10, including an administrative processor comprising an impact value component for assigning a plurality of impact values, one impact value for each workload unit assigned to each of the plurality of computing systems in a processing environment having a plurality of computer systems each having a plurality of assigned workload units, wherein said assigning of each impact value comprises determining a change in system expiration date should a workload unit be

removed from the system; and a processing component for assessing the workload based on said impact values.

Anticipation under 35 USC 102 is established only when a single prior art reference discloses each and every element of a claimed invention. See: In re Schreiber, 128 F. 3d 1473, 1477, 44 USPQ2d 1429, 1431 (Fed. Cir. 1997); In re Paulsen, 30 F. 3d 1475, 1478-1479, 31 USPQ2d 1671, 1673 (Fed. Cir. 1994); In re Spada, 911 F. 2d 705, 708, 15 USPQ2d 1655, 1657 (Fed. Cir. 1990) and RCA Corp. v. Applied Digital Data Sys., Inc., 730 F. 2d 1440, 1444, 221 USPQ 385, 388 (Fed. Cir. 1984). Since Yang does not teach each and every claim element, Applicants conclude that Yang does not anticipate the invention as claimed and that all of the pending claims are patentable over the Yang patent.

Based on the foregoing amendments and remarks, Applicants respectfully request entry of the amendments, reconsideration of the amended claim language in light of the remarks, withdrawal of the rejections, and allowance of the claims.

Respectfully submitted,

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